

REMARKS

Reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

A. Claim Status / Explanation of Amendments

Claims 1-4, 7, and 15-21 are pending of which claims 1-4, 7, and 15-20 were rejected whereas claim 21 was withdrawn from consideration as being directed to a non-elected invention. Applicants reserve the right to pursue the withdrawn claim in a divisional application.

By this paper, claims 1 and 20 are amended and claim 2 is canceled without prejudice or disclaimer. Applicants reserve the right to pursue the canceled claim in a continuing application. Claims 1 and 20 are amended to incorporate the subject matter of canceled claim 2 while claim 20 is further amended to correct a grammatical error.

No new matter will be introduced into this application by entry of these amendments. Entry is respectfully requested.

B. Rejection under 35 U.S.C. § 112, second paragraph

Claims 1 and 20 were rejected pursuant to 35 U.S.C. § 112, second paragraph as allegedly being indefinite. In particular, the Office Action contends that in claims 1 and 20, the recitation of “polytetrafluoroethylene in an amount of from 15% by mass to 100% by mass based on 100% by mass of the binder resin” is indefinite since “it is unclear as how there could be any binder resin or any of the other components if there is 100% by mass of polytetrafluoroethylene.” [2/6/09 Office Action, p. 2]. Applicants respectfully traverse the rejections and note that the claimed 15% by mass to 100% by mass of polytetrafluoroethylene based on 100% by mass of the binder resin represents the ratio of the two components. For example, if the coating composition

contains 100% by mass of polytetrafluoroethylene based on 100% by mass of the binder resin, then the ratio of polytetrafluoroethylene to the binder resin is 1:1. Accordingly, Applicants respectfully submit that the concentration ranges as recited in claims 1 and 20 are clear, well-defined, and, hence, definite.

The Office Action also rejected claim 20 pursuant to 35 U.S.C. § 112, second paragraph, alleging that “the term “obtainable” is found indefinite as it is not clear whether the film is made by the process steps which follows this segment of the claim language or not.” [2/6/09 Office Action, p. 2]. Applicants have amended claim 20 such that “obtainable” is changed to “obtained” to indicate that the film is made by the process steps which follow. Applicants therefore submit that claims 1 and 20 are in proper form and respectfully request withdrawal of the Section 112 rejections.

C. Rejections under 35 U.S.C. § 103(a)

Claims 1, 3-4, 7 and 15-20 were rejected pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,742,110 to Sakashita, et al. (hereinafter “Sakashita”) in view of U.S. Patent No. 5,948,339 to McDermott, et al. (“McDermott”). [2/6/09 Office Action, p. 3]. The Office Action also rejected claim 2 pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over Sakashita in view of McDermott, and further in view of U.S. Patent Appl. Publ. No. 2002/0161091 to Amou, et al. (“Amou”). [2/6/09 Office Action, p. 5].

Applicants respectfully traverse the Section 103 rejection of claims 1, 3-4, 7, and 15-20 since, as set forth in detail below, Sakashita and McDermott, whether alone or in combination, do not teach, disclose, or suggest each and every element of these claims. Claim 2 has been canceled, rendering the rejection of this claim moot. However, since the subject matter of claim 2 has been incorporated into claims 1 and 20, the rejection of claim 2 as allegedly being

obvious over Sakashita in view of McDermott and further in view of Amou is also overcome and traversed on the merits. In view of the following remarks Applicants kindly request that the Examiner reconsider and withdraw the rejections.

Sakashita discloses a polyamide composition comprising a mixture of one or more fillers such as titanium dioxide powder, polyamide-imide, polyimide, and polytetrafluoroethylene (PTFE). Sakashita also discloses that the fillers may be used after they have been treated with a silane coupling agent. [see, e.g., Sakashita, col. 6, lns. 1-29]. In rejecting claim 1, the Office Action contends that “Sakashita et al. disclose a polyamide moldable composition ... wherein said composition comprises polyamide-imide, a mixture of one or more fillers such as titanium oxide powder and polytetrafluoroethylene.” [2/6/09 Office Action, p. 3]. Applicants respectfully submit, however, that Sakashita’s composition includes polyamide as a main component (as opposed to polyimide or polyamide-imide as the binder resin as recited in pending claims 1 and 20).

Furthermore, the composition disclosed by Sakashita is used as a molding resin which may be used in molding processes such as compression molding, injection molding, or extrusion molding (see, e.g., Sakashita, col. 1, lns. 13-20). Consequently Sakashita’s polyamide composition is completely different from Applicants’ “wear resistant and seizure resistant film formed on a sliding part, wherein the film is formed of a coating composition comprising a binder resin, which is polyimide or polyamide-imide” as recited in pending claims 1 and 20. Applicants therefore respectfully submit that a person of ordinary skill in the art would not be motivated to apply the polyamide composition disclosed by Sakashita to a film formed on a sliding part. A person of ordinary skill would recognize that molding processes are not practical for the formation of a thin film.

In discussing Sakashita, the Office Action acknowledges that “[t]he reference although disclosing the treatment of fillers with silanes, does not expressly disclose the amount of silane used.” [2/6/09 Office Action, p. 3]. In attempting to remedy this deficiency the Office Action refers to McDermott which discloses a liquid injection molding composition. The Office Action contends that McDermott discloses a “liquid injection molding composition comprising 0.1 to 10 parts by weight of a silane which is also used to treat the fillers.” [2/6/09 Office Action, p. 3]. Applicants respectfully disagree with the Office Action and submit that a person of ordinary skill in the art would not be motivated to apply the liquid injection molding composition disclosed by McDermott – whether alone or in combination with Sakashita – to a film formed on a sliding part as required by claims 1 and 20.

McDermott discloses that the molding composition contains a filler such as titanium dioxide (col. 8, Ins. 50-53) and a SiH composition (col. 3, Ins. 37-40). However, the SiH composition disclosed by McDermott is not a silane coupling agent. A silane coupling agent has 1) a hydrolysable group such as a halogen atom binding with a silicon atom, hydroxyl group, and alkoxy group, which reacts with an inorganic substance, and 2) a saturated hydrocarbon group which can react with an organic compound. The SiH composition disclosed by McDermott is not a silane coupling agent because the groups thereof binding with Si elements are saturated. This is described, for example, by McDermott at col. 7, Ins. 7-17 as “the R of formula (4) as well as the R herein should be saturated.” A typical example is provided by formula 7 of McDermott.

Since McDermott’s SiH composition serves as a cross-linking agent for hydrosilylation reaction, the SiH composition is different from the silane coupling agent in their functions. This is described beginning at col. 8, In. 1 which recites “this SiH olefin addition.” This describes a hydrosilylation reaction or an addition reaction of Si-H bond(s) across unsaturated bond(s).

Applicants further note that McDermott discloses that the molding composition contains 0.1 to 10 parts by weight of the SiH composition (see, e.g., col. 3, lns. 37-40). Applicants respectfully submit, however, that “0.1 to 10 parts by weight” is the ratio of the SiH composition to the molding composition. This is not the same as the ratio of the SiH composition to the binder resin that is polyimide or polyamide-imide as required by claims 1 and 20. Accordingly, McDermott fails to remedy deficiencies in Sakashita since there is provided no teaching or suggestion of a coating composition comprising a “silane coupling agent in an amount of from 0.1% by mass to 10% by mass based on 100% by mass of the binder resin” as recited in pending claims 1 and 20.

The Office Action asserts that the combination of Sakashita and McDermott “although disclosing the use of titanium oxide powder, do not expressly disclose the particle size of this powder.” In attempting to remedy this deficiency the Office Action refers to Amou and contends that Amou discloses the use of titanium oxide particles “wherein said titanium oxide particle has an average diameter of 0.1-100 microns.” [2/6/09 Office Action, p. 5].

In paragraph [0024], Amou discloses a resin composition that contains a filler such as titanium oxide particles having an average diameter of 0.1 to 100 microns. However, the resin disclosed by Amou is a low dielectric loss tangent resin used for insulating materials of electric parts. Consequently Amou’s low dielectric loss tangent resin is completely different from a coating composition that forms a wear-resistant and seizure-resistant film formed on a sliding part. Amou specifically explains that “[f]or controlling the dielectric constant, the addition of titanium oxide having high dielectric constant ... is preferable.” [Amou, ¶0059]. As explained, for example, at p. 4, lns. 8-14 of the instant specification, titanium oxide powder having an average particle diameter of 1 μm or less has excellent dispersability in the binder resin and significantly assists in preventing the solid lubricant from dropping out of the film. Applicants

therefore respectfully submit that Amou provides no teaching or suggestion that the use of titanium oxide powder having a diameter of 1 μm or less has excellent dispersability in the binder resin and prevents dropout of the solid lubricant from the film. Consequently a person of ordinary skill would not be motivated to combine the teachings of Amou with Sakashita and McDermott to obtain the coating composition recited in claims 1 and 20.

Accordingly, Sakashita, McDermott, and Amou – whether alone or in combination – fail to teach, disclose, or suggest a:

wear resistant and seizure resistant film formed on a sliding part, wherein the film is formed of a coating composition comprising a binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from 15% by mass to 100% by mass based on 100% by mass of the binder resin, titanium oxide powder particles in an amount of from 5% by mass to 35% by mass based on 100% by mass of the binder resin, and a silane coupling agent in an amount of from 0.1% by mass to 10% by mass based on 100% by mass of the binder resin, the solid lubricant, the titanium oxide powder particles and the silane coupling agent being dispersed in the binder resin of the film, and the average primary particle diameter of the titanium oxide powder particles being 1 μm or less

as recited in Applicants' amended claim 1. Applicants respectfully submit that claim 1 is therefore patentable over Sakashita, McDermott, and Amou. Since analogous elements are recited in independent claim 20, it is also deemed patentable over Sakashita, McDermott, and Amou. Claims 3-4, 7, and 15-19 are in condition for allowance by way of their direct or indirect dependency on claim 1. Applicants therefore respectfully request that the Section 103 rejection of claims 1, 3-4, 7, and 15-20 be withdrawn and submit that these claims are now allowable for the above reasons. Early, favorable action in that regard is respectfully requested.

Applicants have chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements

should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Likewise, Applicants have chosen not to swear behind the references cited by the Office Action, or to otherwise submit evidence to traverse the rejection at this time. Applicants, however, reserve the right, as provided by 37 C.F.R. §§ 1.131 and 1.132, to do so in the future as appropriate. Furthermore, Applicants have not specifically addressed all rejections of the dependent claims. Applicants respectfully submit that the independent claim from which they depend is in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicants, however, reserve the right to address such rejections of the dependent claims in the future as appropriate.

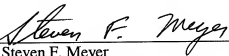
CONCLUSION

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is earnestly solicited. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 504827, ORDER NO. 1004378.51670.

Respectfully submitted,
LOCKE LORD BISSELL & LIDDELL, L.L.P.

Dated: July 6, 2009

By: 
Steven F. Meyer
Registration No. 35,613

Correspondence Address:

LOCKE LORD BISSELL & LIDDELL, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8600 Telephone
(212) 303-2754 Facsimile